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ABSTRACT

The paper describes a program of teaching simultaneous communication (total communication) to behaviorally disordered preschool children, and presents the cases of two autistic and two autisticlike children. Simultaneous communication involves tactile, visual, oral, and auditory modalities and combines spoken language with Signed English. Before sign language can be used in a child's treatment, some social interaction, eye contact, and compliance training are needed. To achieve this end, intrusive therapy is used in which a therapist does whatever will make her presence felt by the child. Sign is then paired with verbal speech in greeting, song, rhyme, instruction, and announcement of activity change. Intervention with the four children suggests that sign not only stimulates skill in communication, but often energizes expressive speech as well. (SBH)

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HANDS-ON WITH SIGN AND SOUND

Introduction to a Workshop

on

Simultaneous Communication

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HANDS-ON WITH SIGN AND SOUND

In November 1976, at an annual meeting in San Francisco of the American Association of Psychiatric Services for Children, I reported on the "lagniappe effect" of teaching sign language to autistic and other language-impaired children. The department joke was that the national group had to accept my proposal in order to learn the meaning of the "psychiatric" term, lagniappe. For the benefit of any of you who may not know, lagniappe is a French word commonly used in Louisiana to indicate a little something extra, often extended unexpectedly. Quite unexpectedly, my initial presentation produced continuing lagniappe.

After reporting in San Francisco, I was invited to expand on the topic at a Vanderbilt University symposium, to lead a workshop on simultaneous communication in Oakland, California, to present at a regional meeting of the National Society for Autistic Children (NSAC), to conduct a workshop at the Allan Cott School for Autistic Children in Birmingham, and last August to report on simultaneous communication at a biannual meeting in Jerusalem, Israel of the International Association for the Scientific Study of Mental Deficiency. At last year's CEC meeting in Dallas, I co-presented a case study of a four-year psychoeducational intervention in a therapeutic preschool and a public school class for autistic children. I presented on my work in the preschool and reported that, of the varied treatment modalities used, the most valuable intervention strategy in our judgment was simultaneous communication.

This afternoon, I would like to offer a more practical hands-on experience, so as to provide you with something concrete to take back with you. I plan to set the stage with a formal presentation of our effort with simultaneous communication, including documentary video of illustrative cases, then to shift to a workshop format, and to end by affording each of you the opportunity to

practice the technique first-hand.

Before sharing our experience with you, I would like to acquaint you briefly with the setting in which I work. The Therapeutic School (TS) of the Department of Psychiatry, Louisiana State University Medical Center, is a New Orleans based outpatient facility which treats behaviorally disordered preschool children. Its multidisciplinary approach includes contributions from psychiatry, psychology, social work, education, speech pathology, occupational therapy, and drama and movement therapy.

When our educational director was in Chicago in March of 1975, she visited the David School of the Dysfunctioning Child Center at Michael Reese Hospital, and was intrigued by the innovative communication model fortuitously developed by psychologist Margaret Creedon, then Director of the David School. Three months later we attended an NSAC conference, where a simultaneous language workshop by Creedon (1975) and presentations by several other practitioners who had independently stumbled upon the same idea convinced us to add this new component to our program.

In short, simultaneous communication--sometimes called total communication--is a method engaging tactile, visual, oral, and auditory modalities and combining spoken language with Signed English (Gustason, Pfetzing, & Zawolkow, 1972), a formal motor language customarily reserved for the deaf. Signed English closely parallels the syntax of everyday verbal English and assures a one-to-one correspondence between simultaneously presented manual signs and spoken words. The goal of the approach is <u>not</u> speech--although verbal language is warmly welcomed if it does occur--but rather a viable communication system affording its users the ability to effectively interact with their environment.

Perhaps the greatest immediate appeal of this new component was its "good fit" with other facets of our program, its compatibility with an intrusive

approach within a developmental framework, with active parent participation. A second appeal was the way in which signing turns a liability into an asset by legitimizing the autistic-like child's characteristic ability to make complex hand movements.

Prior to the introduction of sign, traditional speech therapy had been used at our school in an attempt to ameliorate the autistic child's impaired language skills. But success in evoking speech was extremely limited, and there was little transfer of training. We were ready to try a new approach, though I must confess that we met some minor resistance from our former speech and language consultant who initially considered sign a substandard form of communication. Because she declined to include motor language in the 25 minute speech therapy session which most of our children were getting at the time, the responsibility for the implementation of sign fell upon the teacher-therapists--a fortunate happening in retrospect, since the teachers' use of sign expanded the children's potential exposure from the 25 minute speech therapy session to the full three-hour morning.

The speech consultant soon recognized the value of the innovative approach, and many of the graduate students whom she supervised began using some sign in the small-group speech session which replaced the earlier individual therapy model for autistic-like children. Our current speech and language consultant has shared her own enthusiasm for total communication with her graduate students. The method is now used in small-group and individual sessions, when appropriate. Sign <u>is</u> compatible with the other parts of our program and has integrated well with more traditional forms of speech therapy.

Before sign can be included in a child's treatment, some social interaction, eye contact, and compliance training are needed. Intrusive therapy is used in order to make and maintain contact with the child, to facilitate

his body and affective awareness, and to enhance social interaction. To be intrusive, a therapist does whatever will make her presence felt by the child (Creedon, 1973). This may include "baby games," rubbing the child's tummy, fingering his face, or lowering his head to the ground. The child may tolerate--and then learn to enjoy--gentle blowing on his neck and face, and may move his head to differentially receive the contact. As you can see, intrusion is physical, tactile, and affectively and auditorially oriented. It involves entering the child's world, recognizing and acknowledging his possible discomfort, but continuing contact, so that the therapist-child dyad can share universal experiences.

Just how did we implement sign into the TS? Armed with the Creedon manual (1973), the teachers and several mothers took a few initial lessons in Signed English from a local interpreter for the deaf, and we were in business. We met no parental resistance. Most mothers observed frequent training sessions, participated actively in one of the four weekly sessions, and taught their spouses what they learned. Ideally both parents used the communication model in the home, thereby reinforcing our work and facilitating its generalization to other settings.

Approximately 15 minutes of each three-hour school day are devoted exclusively to simultaneous language instruction. The child and the therapist are seated facing each other, with the child's knees held gently but firmly within the adult's knees. This position of control frees the therapist's hands to establish eye contact, to demonstrate the sign, to mold the child's hand/hands into the sign, and to immediately reward approximations to the desired behavior. Later, the therapist merely prompts the sign, and eventually fades the prompt. The therapist not only vocalizes what she signs, but verbally interprets the child's gestural response as well.

Since autistic children do not readily imitate and typically have an impairment of gesture as well as of spoken language, the therapist may need to physically put the child through the sign many times. Choice of signs is critical; those selected must be relevant to the child's food preference or to another of his needs or wants, since that food or want will be a potent reinforcer. It is important that the therapist speak "economically," directly to the child, and always with eye-to-eye contact; whenever possible, it is desirable that the movement of the sign reinforce the syllables of speech. Tactile, visual, and auditory channels are maximally engaged only when clarity of sign is combined with precise speech articulation.

In addition to the structured session, the children have additional receptive exposure when simultaneous communication is used informally in the playroom with a small group. Sign is paired with verbal speech in greeting, song, rhyme, instruction, and announcement of activity change. The combination of sign and sound has become a significant part of our intervention strategy. To demonstrate the results of our efforts, I would like to tell you of our experience with four children.

I. RYAN

Ryan, a handsome boy with many autistic-like features, entered the TS two months short of his third birthday. His early behavior was characterized by lack of affect, general sluggishness, and fascination with and concomitant intense fear of a jack-in-the-box. (Show film segment 1.)

Ryan's availability to do structured playroom "work" was always variable. At times he was unresponsive, often with a dull, "spaced-out" look: slightly open-mouthed, eyes glazed, protruding lower lip. He seemed deaf on occasion, and at other times cried or laughed without apparent reason.

Five months later, at age three years, three months, Ryan's speech remained minimal: soft gutteral sound and occasionally a single echoed word, often almost inaudible. Although no words could ever be evoked from Ryan, he gave the impression that words were available, if only the key could be found. It was at this time that the simultaneous language format was introduced into our school.

"Cookie" was chosen as Ryan's first sign. Although he refused to eat the cookie, he said "cookie" eight times during his third signing session. Since Ryan liked grapes, the sign for grape was chosen--more appropriately, perhaps--as his second sign. The next film segments were all taken within the first three weeks of Ryan's signing experience; he had a signing lesson on each of his four mornings per week nursery sessions. (The teachers spend the fifth morning in the field--on home visits and consulting at area schools, section meetings, faculty meetings, etc.) The video record of our early effort at signing reveals the changes we have made. Individual signing lessons are often held within the playroom setting, and not in the small treatment room which you will see. Also, the teachers' increased proficiency in their own use of sign has served to increase the children's receptive exposure. I for one have learned not to artifically prolong my articulation--a mistake which you will see in the next segment, in which I am enlisting Ryan's mother's assistance in his fourth signing lesson. The next day Ryan began responding verbally on cue. When he said "grape" with 100% accuracy at the end of two weeks, the sign for apple was introduced, with interesting results. (Show film segment 2.)

The segment of Ryan responding to visual stimulus cards was taken after approximately six-months training. The final video, after seventeen-months receptive exposure to sign, demonstrates the residual inconsistency of Ryan's

performance. Unfortunately, it was not representative of his maximal verbal production at the time. (Show film segment 3.)

I regret that Ryan's ability to sing all the words to "Happy Birthday" was not captured on video. His progress in communication was incremental and slow, and his performance variable and unreliable. Ryan is now eight years old. When he left our setting, he attended a kindergarten class for the handicapped in an Orleans Parish Public School. His teacher reported that Ryan did basic kindergarten work and, although he still had difficulty with concepts, he was on grade level in number- and letter-recognition. More pertinent, perhaps, to today's discussion, Ryan improved dramatically in the area of speech, and ended the year speaking spontaneously, more appropriately, and in longer sentences--even driving his teacher to distraction with his "why" questions! After a year, Ryan moved on to Public School class for the Learning Disabled, where he has continued to progress.

II. BERNIE

Our next video star is Bernie, a handsome, classically autistic boy who presented totally nonverbal at age three years, four months. His early behavior was characterized by constant running around the room; some of his movement was productive, to explore equipment, but much seemed aimless, occasionally almost animal-like in its intensity and noise quality. The first film segment was taken early in Bernie's attendance, and dramatically demonstrates his acute frustation as being unable to communicate. (Show film segment 4.)

Bernie was still without speech a year later, when the new communication mode was first implemented at our school, with Bernie signing "cookie." After two lessons, Bernie said an identifiable approximation of "cookie," his first

word, while being put through the sign at home. (It was a month before he said it again, however.) After three weeks, Bernie learned to sign "cookie." The next film segment clearly demonstrates Bernie's mother's active participation in the program. Note that at first Bernie was uninvolved; later he cooperated passively, then actively anticipated the sign, and finally signed. It is interesting that we missed Bernie's first "baby sign." Creedon (1976 a) recommends early acceptance of approximation, and that the therapist not demand "perfect diction" at first. (Show film segment 5.)

The next video segments were all filmed during Bernie's third month of training. He learned several signs, each of which dropped out quickly as he replaced it with verbal speech. On the day the sign for chip was introduced, Bernie said "chip," though his articulation was poor. Note Bernie's eagerness to ask for chip. . . As the video proceeds, you will see the increasing appropriateness of Bernie's affect, and his first simultaneous communication, when he signed and said "drink." Later, when Bernie was saying "chip" and "drink" with his mother, he corrected her misinterpretation of his articulation. His positive intentionality is revealed, along with his annoyance at being misunderstood. (Show film segment 6.)

The final video clip on Bernie was filmed in late July, '76, after nine months of training, and represents Bernie's 116th--and final--lesson at school. You will note increased signing on my part. It was thrilling to see Bernie's confidence grow as he became more competent in communication. He was verbalizing two- and occasionally three-word combinations, and his parents estimated his spontaneous verbal repertoire at the time in excess of 150 words. But Bernie's gains were not only in language but in cognitive and social skills as well. (Show film segment 7.)

Bernie will be nine years old in May. For two years after leaving our

setting he attended a class for autistic children in a Jefferson Parish Public School. Bernie's teacher and her aide used sign for the first half of his kindergarten year, after which the teacher described him as "verbal, able to express his needs, and to answer questions in phrases or simple sentences." Following the first half year, sign was used only when Bernie was having a problem with a concept or with transitions. The teacher feels that signing helped Bernie during frustrating periods by giving him "something to hang on to." Upon completion of first grade, Bernie accomplished first-grade math, reading, spelling, and beginning writing; he addressed his teachers by full name and initiated interaction with them, displayed interest in all the children on the playground, and accurately predicted sequence of events. Incidentally, Bernie is the child on whom I reported last year at CEC; my co-presenter was his kindergarten/first grade teacher.

A year and a half ago, Bernie and his family moved to Corpus Christi, Texas. I visited the family 3 months ago, and am pleased to report that Bernie continues to make progress.

III. NATHAN

You will recall that the goal of the simultaneous communication approach is <u>not</u> speech, though admittedly we welcomed it warmly as lagniappe when it occurred in the dramatic case of formerly mute Bernie. Please be aware that our efforts have <u>not</u> always been rewarded with verbal language. In spring 1977 when I spoke in Nashville and in Oakland, I reported on a case in which training in sign had not as yet resulted in vocal behavior. I'd like to share that report first, and then offer a post script.

Nathan, yet another beautiful, classically autistic boy, entered our setting without speech at age two years, three months. An early film reveals

a limited sample of Nathan's presenting behavior: his ritualistic hand movements, arm flapping, and the way in which he covered his ears and hit his mouth. (Show film segment 8.) A report from the LSU Department of Audiology and Speech Pathology, where Nathan was evaluated a month before coming to the TS, stated, "In view of Nathan's apparent lack of desire to communicate at the present time, he is not considered. . . a good candidate for therapy."

Four months of intensive intrusion were required before sign training could be incorporated into Nathan's treatment, when he was two years, seven months. He signed an approximation to "chip" twice the first day its sign was presented, but it was five sessions before he signed chip again. We have no video of Nathan's gradual progress in sign, but a review of daily written records reveals that while Nathan required 15 lessons for mastery of his first sign, progressively fewer sessions were needed for each subsequent sign. Nathan's third sign was "apple," an approximation of which he articulated about three dozen times during the first 60 sessions recorded following its introduction. But we still considered Nathan essentially mute; while his vocalization was highly suggestive, it could not be evoked with any consistency.

In January, 1977, I was assigned a graduate student in special education from a local university, who chose to do her practicum at the TS. She spent approximately 200 hours in our setting during the four-month spring semester, with Nathan's treatment being her major assignment. She took over Nathan's signing training on his 64th formal lesson. The video which you will see was filmed during Nathan's 87th signing session at school. The graduate student's gentle warmth, the effectiveness of her technique, and an indication of Nathan's ability at the time are revealed in this video segment. (Show film segment 9.)

When I first reported three years ago, I attempted to explain Nathan's limited progress, as compared to that of the other children presented. I

suggested that one contributing factor was Nathan's mother's comparative lack of involvement in his signing training, since his baby sister was born two months after sign was introduced into his program. Also, because many researchers (Fish et al., 1968; Rutter et al., 1967) have demonstrated the relationship of IQ to abnormality in speech development, I offered as a possibly more significant variable the difference in IQ scores among the three cases reported. But I was careful to acknowledge that simultaneous communication has been used successfully with the retarded in other settings.

The most significant point made about Nathan was that his lack of vocal behavior did not in any way diminish the value of sign as a viable communication system. For surely--even in the absence of verbal speech--no one could deny that Nathan's life was made more meaningful and satisfying by the language of sign.

Well, P.S. A week after my return from the second presentation of Nathan, he started to TALK! True, his volume was so low that his production was almost inaudible. But SPEAK he did. So much for explanation and/or rationalization!

Within a one-month period after gaining speech, Nathan said an identifiable approximation of the 11 food items on his signing tray, as well as approximations of 11 other words, in response to common objects and pictures of food and objects. At the end of his first verbal month, Nathan began producing two-word combinations, such as "more apple," etc., most often with a sign prompt, but occasionally unprompted. During signing, Nathan was very attentive to the therapist's verbal production, and tried very hard to articulate new words. His delight when successful was always a joy to behold!

Nathan's inflectional patterns continued limited while at TS. He added approximately 25 words to the original 22 in his verbal repertoire, and six months after gaining speech, articulated his first three-word sentence. We

continued working on multiple-word production, and on "yes" and "no" responses. Nathan left our setting to join a class for autistic children in an Orleans Parish Public School. It is interesting that unlike Bernie, whose signs dropped out as he mastered spoken language, most of Nathan's verbal productions were simultaneous, along with motor signs.

IV. JOEY

A fourth and final case study will add yet another dimension to a consideration of the efficacy of the simultaneous language technique. Joey, an attractive boy with good fine and gross motor skills, presented at age three years, ten months with what appeared to be a primary communication disorder associated with hyperactivity and distractibility. There were autistic features in Joey's speech patterns, but he lacked neither eye contact nor interpersonal relating skills, although the latter abilities were impaired. Joey used no meaningful conversational speech; his language was almost exclusively echolalic, some immediate, and the rest delayed--phrases he had heard elsewhere, primarily on T.V.

When after one month Joey was somewhat comfortable in our setting, formal signing was introduced in an attempt to extinguish his echolalia. I regret that a recording of his experience with sign is unavailable on video. A review of daily records demonstrates his progress. When training was initiated, Joey could verbally identify all food offered and objects in the room, but it was necessary to place a finger on his mouth to prevent his parroting the question. But although Joey could articulate flawless identifications, he could not produce a root sentence, such as "I want drink." Using my signing as a visual cue, only initially accompanied by my vocalization, Joey was able to say "want drink" with 100% accuracy during the first session, and "I want

drink" just as flawlessly when the more complete response was similarly introduced three sessions later.

An early morning home visit at the end of one week of language training demonstrated the generalizability of Joey's new skill. Since he had not yet eaten, I asked his mother to prepare a full breakfast, in spite of her pronouncement that he ate little in the morning. Joey ate the entire meal--juice, bacon, scrambled egg, toast and milk--prompted throughout by my asking, "What do you want, Joey?" He answered verbally in unison with my motoric prompt, then ate the corresponding food. Later during the home visit, Joey produced his first original and totally unprompted sentence.

I abandoned sign per se after two weeks. Since Joey could read, I decided to provide a card with a written visual prompt instead of signing a motoric cue. Using this method, Joey learned to say, "This is a . . ." and "I see a . . ." and "This feels . . ." first with the written prompt, then with a blank card, and finally without the card or any other prompt. All that was required was a total of eight sessions with sign and seven more with cards to prompt Joey to the syntactically correct response. While not completely extinguished, echolalia dramatically decreased; it reappeared only with the presentation of too many or too complex stimuli. Verbalizations became more appropriate and more spontaneous, and generalized to other settings. A residual mechanical quality seemed to decrease slowly over time.

Joey left our setting for an L.D. classroom in an Orleans Parish Public School. His current placement is in an "Adjustment" class, where his teacher reports phenomenal progress in language, concept acquisition, and socialization. Joey still becomes somewhat confused by complex instructions, and when upset has difficulty with expressive language. But his understanding of language--and even of its subtleties--is clear, and his speech is neither echolalic

nor robot-like. Indeed, Joey's personality has emerged, and he now engages in sophisticated social give-and-take.

Experience with these four children strongly suggests that sign not only stimulates skill in communication, but often energizes expressive speech as well. We can say that signing works. Unanswered, however, is "How does it work?" It may be instructive to briefly explore several hypotheses.

According to Piagetian theory (1954), the development of language and cognition follows a regular progression in which children first learn to direct their body actions, then their distal senses (sight, hearing), and finally their language and thought toward objects and events beyond their immediate milieu. A further Piagetian assumption (1954) is that the earliest component, directed body action, provides the base on which subsequently developing intentional activity is built. Furth (1976) feels that simultaneous language ties in neatly with Piaget's theory (1954) of a spontaneous gesture base to communication, and that by activating this base, the model may eventuate in speech.

Schaeffer et al. (1976) feel that actions in sign are linked to a wealth of perceptual and affective information. Fulwiler and Fouts (1976) allude to the tactile stimulation provided in shaping signs. The chairman of my department, William Easson (1976), finds a value in that the stimuli provided in signing are useable, filtered, and carefully controlled, step-by-step.

Miller and Miller (1973) allude to the remoteness of spoken words from their respective referents, implying, in contrast, the observable relationship between many signs and their referents. Not only does the sign "ball" look like a ball, but unlike the word which disappears immediately once articulated, the visual image of the sign remains. The Millers (1973) suggest that by pairing sign with spoken word, the meaning inherent in the sign transfers to

the oral word, thereby facilitating the understanding of receptive verbal language and for some, stimulating the development of expressive verbal language, as well.

Hermelin and O'Connor (1970) state that autistic children are motorically facile, and in a learning situation often rely on motor rather than visual or verbal cues. Schlesinger and Meadow (1972) agree on the need for techniques which stress action and physical involvement, and state that acceptance of the preferred modality may "insure optimal use of other more neglected modalities through association pathways" (p. 43).

Creedon (1976 b) observes that "children feel, see and hear the language" (p. 78) when the simultaneous communication model is employed--in other words, that chances of getting through to the children are enhanced by the dual channels of sign and sound. Schaeffer et al. (1976) agree that the therapist's voice or his signs--or their combination--may serve as a cue for the child's response; they propose the child's fading of signs as evidence of the internalization of their meaning. If it is true as Bryson's experiments (1970, 1972) suggest that a short-term memory problem is the basic cognitive defect in autistic children, then the success of the simultaneous communication model may be due to the fact that both auditory and visual stimuli are presented together in temporal space. Indeed, simultaneous presentation of stimuli is a key educational strategy proposed by Gallagher and Wiegerink (1976).

Rimland (1964) hypothesizes that autistic children are deficient in skills associated with the left hemisphere of the brain--specifically processing sequential auditory input--and that they are more skilled in musical and spatial tasks associated with the right side. Based on this hypothesis, Offir (1976) proposes that sign may work because its visual quality capitalizes on the stronger half of the brain. Schlesinger and Meadow (1972) report on the close anatomical proximity in the brain between the motor area for speech

and that for the hand. Fulwiler and Fouts (1976) suggest that the autistic child's language deficiency "may be due to an inability to make specific crossmodal association and not just an inability to process the auditory or visual information per se" (p. 44). They credit the visual quality of sign with avoidance of the crossmodal difficulty.

There is limited literature on simultaneous communication, but what there is contains seemingly limitless theories of why and how it works. Fortunately, as Offir (1976) astutely observed, "autistic children do not have to wait for the theorists to explain the power of sign" (p. 78).

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